

REMARKS

Claim Amendments

The scope of claim 37 and 49 are amended so as to narrow the claims from which they depend. No new issue is introduced by the entry of these amendments.

Rejections Under 25 USC 102

The Office Action maintains the rejections alleging that Pace anticipates all the claims.

Applicants maintain their arguments from the last reply and incorporate them herein by reference.

In the “Answers to Applicant’s Arguments” section of the Office Action, it is alleged that:

While Applicant is correct that Pace’s composition does comprise more than a brittle fracture material it is a moot point because Applicant does not claim “consisting of.” Specifically, Applicant claims “comprising a brittle-fracture material of the Markush group glass, glass ceramic or ceramic. Therefore for since the claim uses open language the brittle fracture material minimally must contain glass, glass ceramic or ceramic, but may include other substances.

The Office Action appears to ignore parts of the claims. Claim 1, for example, in relevant part reads as follows:

a sealing element which is a brittle-fracture material which consists of glass, glass ceramic, or ceramic.

Claim 51, for example, in relevant part reads as follows:

the sealing material consists of a brittle-fracture material.

Claim 57, for example, in relevant part reads as follows:

a sealing element which is a brittle-fracture material which consists of glass, glass ceramic, or ceramic.

The composition of the sealing element is explicitly restricted by the language “consists of,” and thus, the presence of other materials not explicitly recited is excluded from said sealing element. See *Robie v. Carlton*, 80 USPQ 102 (CCPA 1948), where the court

decided that the term “comprising” in connection with certain elements of a count kept said count open to the inclusion of additional materials than those explicitly recited for said element, but it did not keep open the count to the inclusion of additional materials with respect to other elements in the claim. Likewise in the present case, the claimed molded element is open to the inclusion of other materials than those explicitly recited, but the sealing element, which is explicitly restricted by the claim language “consists of” is not open to other materials than those recited. Because the corresponding element in Pace, as admitted, contains materials other than those recited in the present claims, i.e., conductive metal, the rejections cannot stand.

Additionally, in various dependent claims, which are also allegedly anticipated, features not taught or suggested by Pace are recited. No explanation is provided for the rejection of, for example, claims 40, 41, 42, 43, 47, 48, 53, 54, 55, 56, 58, 59, 60, 61, 62, and 63. For example, regarding claim 41, which is directed to an embodiment of the molded element where the brittle-fracture material with at least one opening and the sealing material are made of the same material, nothing in Pace teaches or suggests such an embodiment. Instead it is clear that the conductive feed-throughs are made of another material than the planar substrate. Also, the Office Action alleges that Pace teaches substrates with one opening, while pointing to figure 5a, which depicts an embodiment with multiple openings. Claim 42, for example, recites “only one opening.” Such is not taught or suggested by Pace.

Likewise to the exemplary claims listed above, and to the few specifically discussed above, none of the claims of the present application are anticipated by the disclosure of Pace for a variety of reasons. As such, applicants request that the Examiner provide an explanation as to why each of the rejected claims is alleged to be anticipated or otherwise request the withdrawal of the rejections

The Office Action also alleges that “Pace discloses that the sealing material has a plate, spherical, conical or cylindrical shape (figure 5a).” Figure 5a shows only feed-throughs that are cylindrical in shape. Thus, the rejection of claims reciting only shapes other than cylindrical based on the disclosure of Pace is not justified.

Applicants’ additionally provide the following comments with regard to the allegation that “Pace discloses that the sealing material is a brittle fracture (green ceramics, col. 7, line 13).”

Pace on column 7, lines 1-14, teaches that

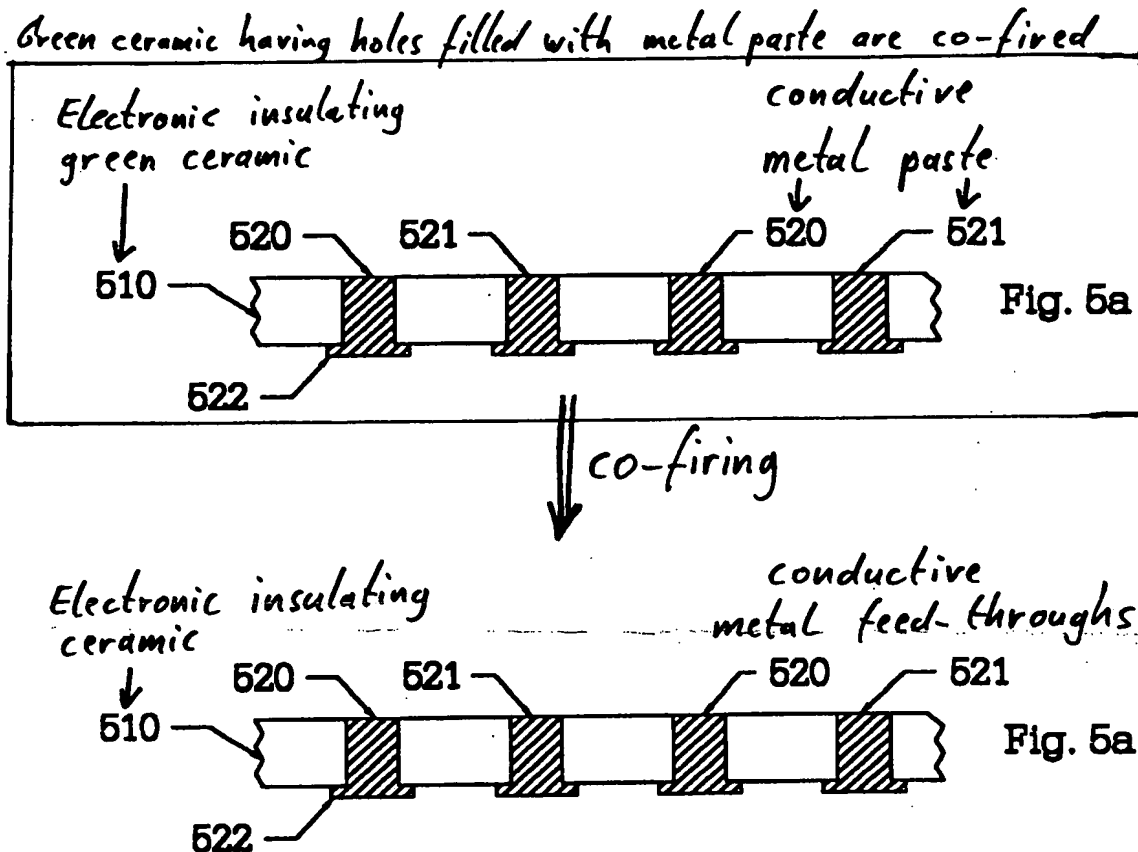
A planar substrate 510 provided with conductive feed-

throughs 520, 521 and terminals 522 for connection to the next level of electronic packaging is illustrated in FIG. 5a. Any suitable electronic insulating material may be used for the substrate 510. Suitable material include silicon, sapphire and ceramics and glass/ceramics comprising alumina, mullite, cordierite, beryllia, aluminum nitride, boron nitride, silicon nitride, silicon carbide and silicon carbide with a small percentage of beryllia.

The feed-throughs 520 and 521 should have good conductivity and preferably maintain a hermetic seal. Refractive metal feed-throughs of tungsten or molybdenum prepared by the co-firing metal pastes in green ceramics provide hermetic feed-throughs.

That is, glass/ceramics as electronic insulating material may be used for the planar substrate 510. The holes in the electronic insulating substrate 510 may be filled with conductive feed-throughs (520, 521). This could be achieved by filling a metal paste in the holes of a green ceramic substrate 510. The green ceramic [electrically insulating substrate 510] with the holes filled with the metal paste is co-fired to provide hermetic feed-throughs [of good conductivity]. Thus, the feedthroughs are not made independently and alone by co-firing of a metal paste and a green ceramic. Rather, the ceramic substrate and the conductive feed-throughs together are made by co-firing of a metal paste and a green ceramic [substrate].

For illustration purposes of the above described process, see the figure below.



Claim 1 of Pace confirms that the invention described therein is as outlined above.

Claim 1 reads as follows:

1. A method of manufacturing a circuit module having a conductive pattern that interconnects input/output pads of at least one semiconductor device to a higher level electronic package, comprising:
 - providing an insulating, planar, inorganic substrate selected from the group consisting of silicon, sapphire and ceramics and glass/ceramics comprising aluminum oxide, aluminum nitride, beryllium oxide, boron nitride, cordierite, mullite, silicon carbide and silicon nitride, the substrate having holes filled with conductive feed-throughs ... (Emphasis added.)

All the teachings throughout Pace are consistent with the characterization of the teachings of Pace above. See, for example, Pace on column 3, lines 14-16, where it is taught that

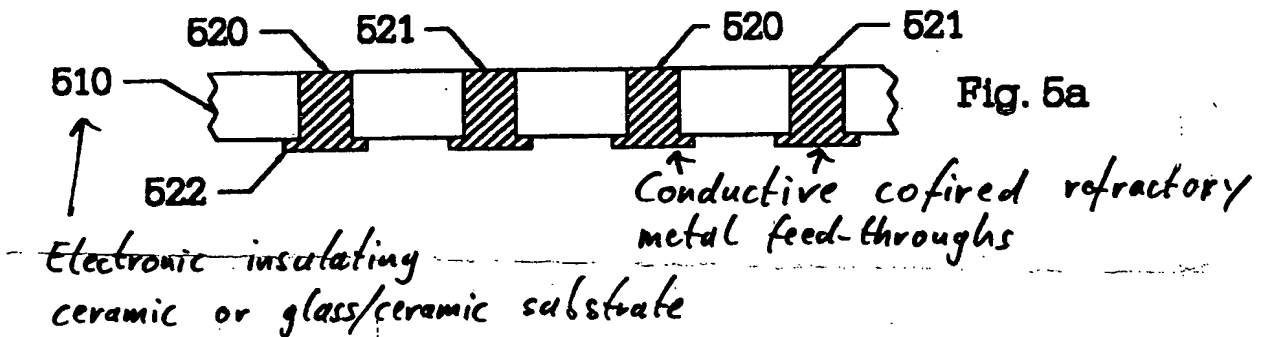
In another embodiment, the invention is a module that employs as a base a ceramic or glass/ceramic substrate having a standard pattern of conductive feed-throughs.

See also Pace on column 10, lines 16 to 19, teaching that

In yet another embodiment, the invention comprises a standardized ceramic substrate having co-fired refractory metal feed-throughs in a standard area array pattern.

For illustration purposes see the figure below:

Standardized ceramic substrate of col. 3, lines 14 to 16, and of col. 10, lines 16 to 19, and of Claims 12, 13:



Pace does not disclose a molded element of the present invention where the opening that is hermetically sealed by a sealing element is of a brittle-fracture material which consists of glass, glass ceramic, or ceramic.

Instead, Pace discloses a molded element that comprises a brittle fracture electrically insulating substrate with at least one opening that is hermetically sealed by not by brittle-fracture material, but a conductive sealing element which is a metal. The brittle-fracture substrate with openings is hermetically sealed by co-firing a green brittle fracture substrate with the openings filled with a metal paste to form the brittle fracture substrate with the openings hermetically sealed by the conductive feedthroughs, not a brittle fracture material.

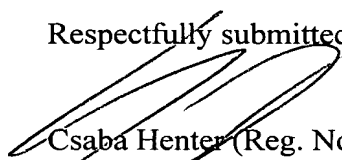
Additionally, the Office Action for the first time specifically rejects with comments claims directed to a mirror, a laminated glass system or an electrochromic glazing. Allegedly, the recitation of the claimed product in the preamble of the rejected claims is given no weight, e.g., is allegedly an "intended use." However, such a narrow reading of these claims is not justified as such would make them duplicate claims, which is clearly not the intended scope of these claims.

Additionally, considering that the prosecution of this application has been ongoing for an extended time, with numerous non-final rejections and several RCE filings, it is unfair at this point for the first time in a final rejection (where entry of amendments to further clarify the claims is not by right) to present such a narrow interpretation of these claims. Applicants were under the impression that these claims were interpreted and examined with the claimed product preamble being limiting. As such, applicants request that the claims be given their intended scope where the products clearly recited in the claim are given weight. Once such is done, the product claims directed to a mirror, a laminated glass system or an electrochromic glazing are clearly not taught or suggested by Pace.

For all the foregoing reasons reconsideration is respectfully requested.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,



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